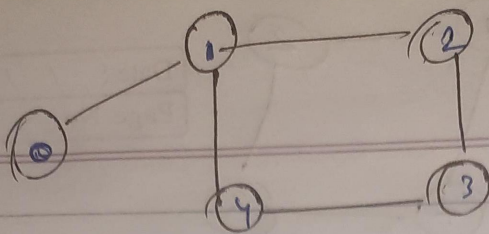


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(By BFS approach)

$N \Rightarrow 5$; $E \Rightarrow 5$

adj. list $\Rightarrow 0 \rightarrow 1$

(\rightarrow neglect)

$1 \rightarrow 0, 2, 4$

$2 \rightarrow 1, 3$

$3 \rightarrow 2, 4$

$4 \rightarrow 1, 3$

neighbours \neq parent
(3) \neq parent 4

cycle is there

DRY RUN

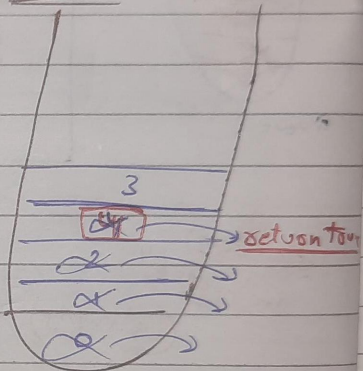
visited

parent

Queue

<u>i=0</u>	0 \rightarrow true
	1 \rightarrow true
	2 \rightarrow true
	4 \rightarrow true
	3 \rightarrow true

<u>i=0</u>	0 \rightarrow 1
	1 \rightarrow 0
	2 \rightarrow 1
	4 \rightarrow 1
	3 \rightarrow 2



~~i=0 if i=0~~

Simple logic

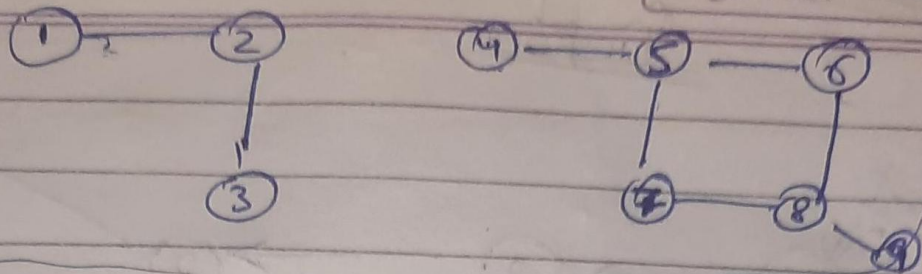
* We will neglect only those nodes, which are VISITED & their parent are in the Neighbours Node

* Cycle is present if, if a neighbour Node is visited and if that neighbour is not parent of front Node

by DFS

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<u>parent</u>	<u>visited</u>	DFS(1, -1)	DFS(4, -1)
1 → -1	1 → true	DFS(2, 1)	DFS(5, 4)
2 → 1	2 → T	DFS(3, 2)	DFS(6, 5)
3 → 2	3 → T		DFS(8, 6)
4 → -1	4 → T		DFS(9, 8)
5 → 4	5 → T		DFS(7, 8)
6 → 5	6 → T		DFS(5, 7)
8 → 6	8 → T		
9 → 8	9 → T		
7 → 8	7 → T		

Cycle Present

here,
5 → T
7 → T
5 is not
parent of
7